

REMARKS

In view of the preceding amendments and the comments which follow, and pursuant to 37 C.F.R. § 1.111, amendment and reconsideration of the Official Action of December 10, 2003 is respectfully requested by Applicant.

Summary

Claims 1 – 3, and 5 – 19 stand rejected. Claims 1, 12 – 15 have been amended. Claim 7 has been cancelled. The remaining claims 1 – 3, 5, 6, and 8 – 19 are pending following consideration of the present amendments and remarks.

Allowable Subject Matter

The Examiner has indicated that claims 12 – 17, dependent on a rejected base claim, would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. As such, Applicants have rewritten claims 12 to 15 in independent form by incorporating the limitations of claims 1 and 11. Therefore, Applicants submit that claims 12 – 15 are now allowable, and so are claims 16 and 17 since dependent on now allowable claim 15.

Rejection under 35 U.S.C. § 103

The Examiner has rejected claims 1 – 2 and 5, 6, 8 and 9 under 35 U.S.C. 103(a) as being unpatentable over Mack et al. (Mack) (U.S. Patent No. 6,462,919) in view of Hardayal Gill (Gill) (U.S. Patent No. 6,275,363). The pending claim 1, directed to a spin-valve type thin film element, has been amended to include features of claim 7. Thus, claim 1 further recites that “wherein the bias layers comprise at least one material selected from the group consisting of α -Fe₂O₃ and CoO”

This added feature relates to a material composition of the bias layers, and the corresponding material group is distinct from the Mack material group cited by the Examiner and found in the Column 8 listing table. As such, this claim 1 feature is not disclosed by Mack or by Gill, and claim 1 is not rendered unpatentable by Mack or by Gill, either singly or in combination with each other.

Therefore, Applicants submit that this claim 1 rejection under 35 U.S.C. §103(a) is no longer valid and respectfully and earnestly solicit the Examiner's withdrawal of same. Applicants also submit that claims 2, 3, 5, 6, 8, 9 – 11, and 18 – 19 are also allowable by virtue of their dependency from now allowable claim 1, either directly or indirectly.

The Examiner has next rejected claims 1 – 3, 5, 9 – 11 and 18 – 19 under 35 U.S.C. 103(a) as being unpatentable over Carey et al. (Carrey) (U.S. Patent No. 6,266,218) in view of Gill. The pending claim 1 recites that the spin valve type thin film magnetic element comprises bias layers for aligning the magnetization direction of the free magnetic layer in the direction substantially perpendicular to the magnetization direction of the pinned magnetic layer, ferromagnetic layers formed in contact with the bias layers, and conductive layers for applying a sensing current to the free magnetic layer. This claim 1 structure is not disclosed or suggested by Carrey. In Carrey, the anti-parallel longitudinal bias structure 90 is in fact composed of bias layers 84, 86 which are separated by a non-magnetic exchange-coupling layer 88. As such, Carrey's bias structure 90 is analogous to Applicants ferromagnetic layers 7, wherein each of the ferromagnetic layers 7 is divided into two sub-layers separated by a first non-magnetic intermediate layer, with the sub-layers being in a ferrimagnetic state in which the magnetization direction of one sub-layer is 180 degrees different from the magnetization direction of the other sub-layer. However, Carrey do not suggest or teach an additional bias layer, such as Applicant's bias layer 6, being in contact with the bias structure 90.

In addition, Gill is silent on bias layers being in contact with ferromagnetic layers and conductive layers. Thus, Applicants submit that claim 1 is not

suggested or disclosed by Carrey or by Gill, either singly or in combination. Consequently, claim 1 is patentable over Carry in view of Gill, as well as claims 2 – 3, 5, 9 – 11 and 18 – 19 by virtue of their dependency from now allowable claim 1, either directly or indirectly. Applicants respectfully request that the rejection of claims 1 – 3, 5, 9 – 11 and 18 – 19 under 35 U.S.C. §103(a) be withdrawn.

Conclusion

Applicants submit that this application is now in condition for allowance, and favorable reconsideration of this application in view of the above amendments and remarks is respectfully requested. If there are additional fees due, Applicants request that this paper constitutes any necessary petition and authorizes the Commissioner to charge any underpayment, or credit any overpayment, to Deposit Account No. 23-1925.

If the examiner finds that there are any outstanding issues which may be resolved by a telephone interview, the Examiner is invited to contact the undersigned attorney at the below listed number

Respectfully submitted,
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